



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Yoshinori Yamagishi et al.

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Customer No. : 34704

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

SUBMISSION OF DECLARATION UNDER 37 C.F.R. 1.132

Dear Sir:

Applicant submits concurrently with the filing of the instant application a Declaration under 37 CFR 1.132. It is respectfully submitted that the instant declaration sufficiently rebuts the examiner's prima facie case of obviousness set forth in the final rejection for the reasons set forth hereinbelow.

The invention as claimed in previously amended claim 1 is directed to a copper alloy consisting essentially of 58 to 66 wt.% of copper, 0.1 to 0.8 wt% of tin, 0.01 to 0.5 wt.% of silicon, at least one of 0.3 to 3.5 wt% of lead and 0.3 to 3.0 wt.% of bismuth, at least one of 0.02 to 0.15 wt.% of phosphorus, 0.02 to 3.0 wt.% of nickel and 0.02 to 0.6 wt% of iron, the total amount of phosphorus, nickel and iron being in the range of from 0.02 to 3.0 wt.%, and the balance being zinc and unavoidable impurities, wherein a proportion of an alpha phase is 80 vol.% or more. Such a copper alloy has an excellent stress corrosion cracking resistance and an excellent dezincing resistance while maintaining excellent characteristics of conventional brasses.

Claims 1 and 5 were rejected under 35 U.S.C. 103 as being unpatentable over JP 60194035.

JP 60194035 discloses a copper alloy consisting essentially of 63.0 to 66.0% by weight of copper, 0.7 to 1.2% by weight of tin, 1.0 to 2.5% by weight of lead, 0.1 to 1.0% by weight of iron, 0.1 to 0.7% by weight of nickel, 0.01 to 0.1% by weight of antimony, 0.01 to 0.2% by weight of phosphorus, and the balance being zinc and unavoidable impurities, the alloy having alpha-phase structure.

However, JP 60194035 fails to disclose or suggest that the copper alloy contains 0.01 to 0.5% by weight of silicon. That is, it is not disclosed in JP 60194035 (in Japanese) that the impurities contain Al, Mn, Si, and S and that the total amount thereof is less than 0.5% by weight, although it is disclosed in Abstract of JP 60194035 (in English) that the copper alloy contains such elements as impurities. As can be clearly seen from data submitted with a declaration, the stress corrosion cracking resistance (broken time) of a copper alloy is improved as the amount of silicon contained in the copper alloy is increased. In particular, a copper alloy as claimed in claim 1 contains 0.01 to 0.5% by weight of silicon, so that the copper alloy has an excellent stress corrosion cracking resistance as can be seen clearly from the submitted data. Thus, JP 60194035 fails to disclose or suggest that the copper alloy contains 0.01 to 0.5% by weight of silicon and that a copper alloy having an excellent stress corrosion cracking resistance is produced by adding 0.01 to 0.5% by weight of silicon thereto.

Moreover, the copper alloy disclosed in JP 60194035 contains 0.01 to 0.1% by weight of antimony which is not contained in a copper alloy as claimed in claim 1. It is well known that the dezincing resistance of a copper alloy can be improved by adding antimony thereto. However, antimony is

harmful to the human body. In addition, if a copper alloy contains antimony, it is difficult to reuse the scraps of the copper alloy, it is difficult to control the concentration of antimony in industrial waste water. Therefore, brasses containing antimony are not used particularly in Japan. On the other hand, a copper alloy as claimed in claim 1 has an excellent dezincing resistance without adding antimony thereto. Therefore, JP 60194035 fails to disclose or suggest any copper alloys having an excellent dezincing resistance without adding antimony thereto.

Thus, JP 60194035 fails to disclose or suggest any copper alloys consisting essentially of copper, tin, silicon, at least one of lead and bismuth, at least one of phosphorus, nickel and iron, and the balance being zinc and unavoidable impurities.

Accordingly, it is believed that the amended claims patentably distinguish the invention from the prior art.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

If any fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,
Yoshinori Yamagishi et al.

By


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I, Rachel Piscitelli, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on March 5, 2007.

